

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended): A reactor for performing a heat-conditioned catalytic reaction in a process fluid, said reactor comprising: plates that are arranged parallel to one another at a distance and that form flat channels with lateral boundary areas that face one another, wherein a portion of said channels contain a solid catalyst and carry a process fluid, and another portion of said channels carry a heat transfer medium in indirect heat contact with the process fluid, wherein said plates are flat or are provided with grooves or ribs and are coated at least partially with a catalyst on the surface that faces the process fluid, and

wherein said lateral boundary areas are jacket pieces, which form a pressure-resistant cuboid block with said channels, plates, and with collectors for the process fluid and for the heat transfer medium, and said reactor is capable of operating at process fluid and heat transfer medium pressures of more than 25 bar.

2. (Cancelled):

3. (Original): A reactor according to claim 1, wherein the channels which carry the process fluid contain corrugated or pleated sheets which form passages for the flow of process fluid.

4. (Original): A reactor according to claim 3, wherein said sheets are perforated and thereby provide flow connections between said passages.

5. (Original): A reactor according to claim 3, wherein said sheets are coated at least partially on both sides with catalyst material.

6. (Original): A reactor according to claim 1, wherein said catalyst layer contains a support medium.

7. (Original): A reactor according to claim 1, wherein said catalyst layer has a thickness of 1-500 μm .

8. (Original): A reactor according to claim 1, wherein said catalyst layer has a thickness of 10-100 μm .

9. (Original): A reactor according to claim 1, wherein said reactor is made of aluminum.

10. (Original): A reactor according to claim 1, wherein said reactor is made of steel or high-grade steel.

Claims 11-24 (Cancelled):

25. (New): A reactor according to claim 3, wherein width of the passages for the flow of process fluid is 0.5-5 mm.

26. (New): A reactor according to claim 5, wherein width of the passages for the flow of process fluid is 0.5-5 mm.

27. (New): A reactor according to claim 1, wherein the distance between plates, not taking into account the catalyst, is 2.5-20 mm.

28. (New): A reactor according to claim 26, wherein the distance between plates, not taking into account the catalyst, is 2.5-20 mm.

29. (New): A reactor according to claim 28, wherein said catalyst layer has a thickness of 1-500 μm .

30. (New): A reactor according to claim 3, wherein the corrugations or pleats which form said passages for the flow of process fluid are coated at least partially on both sides with catalyst material.

31. (New): A reactor according to claim 3, wherein the corrugations or pleats which form said passages for the flow of process fluid are perforated.

32. (New): A reactor for performing a heat-conditioned catalytic reaction in a process fluid, said reactor comprising: plates that are arranged parallel to one another at a distance and that form flat channels with lateral boundary areas that face one another, wherein a portion of said channels contain a solid catalyst and carry a process fluid, and another portion of said channels carry a heat transfer medium in indirect heat contact with the process fluid,

wherein said lateral boundary areas are jacket pieces, which form a pressure-resistant cuboid block with said channels, plates, and with collectors for the process fluid and for the heat transfer medium, and

said reactor is capable of operating at process fluid and heat transfer medium pressures of more than 25 bar.

33. (New): A reactor according to claim 32, wherein said plates are flat or are provided with grooves or ribs and are coated at least partially with a catalyst on the surface that faces the process fluid.

34. (New): A reactor for performing a heat-conditioned catalytic reaction in a process fluid, said reactor comprising: plates that are arranged parallel to one another at a distance and that form flat channels with lateral boundary areas that face one another, wherein a portion of said channels contain a solid catalyst and is in fluid communication with a source of process

fluid, and another portion of said channels is in fluid communication with a source of a heat transfer medium and is in indirect heat contact with said process fluid, wherein said plates are flat or are provided with grooves or ribs and are coated at least partially with a catalyst on the surface that faces the process fluid, and

wherein said lateral boundary areas are jacket pieces, which form a pressure-resistant cuboid block with said channels, plates, and with collectors for the process fluid and for the heat transfer medium, and said reactor is capable of operating at process fluid and heat transfer medium pressures of more than 25 bar.

35. (New): A reactor according to claim 34, wherein each of said channels which contains a solid catalyst is adjacent a channel which carries said heat transfer medium.